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AUTHOR Smull, Michael W.; Bunsen, Teresa D.
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ABSTRACT

This paper presents a model for projecting the need for special education teachers which incorporates key elements of a market-based supply/demand model. The model provides equations to predict the supply of both certified and uncertified special education teachers. It involves the following supply factors: current certified employed teacher supply; attrition rate; initial attrition rate; current uncertified employed teacher supply; number of graduating certified teachers; and number of returning teachers. Demand factors included in the model are prevalence of each disability and required teacher student ratios. (DB)

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PROJECTING SPECIAL EDUCATION TEACHER NEED
A Dynamic Supply/Demand Model

Michael W. Smull
Teresa D. Bunsen
Office of Special Education Programs

INTRODUCTION

A dynamic model for projecting the need for special education teachers is found in figure 1. The model attempts to account for the key elements in determining present or future need for special education teachers. The model allows the user to ask a number of "what if" questions and to obtain answers. Elements in the model can be varied and the effect on supply, demand, and/or need noted. Finally the model is constructed so that where key elements are missing proxy measures may be used.

The model incorporates the elements which would be found in a market based supply/demand model. With regard to supply it provides information on teachers currently employed and those entering the job market. From a market perspective demand can be seen as encompassing either vacancies alone or vacancies and uncertified teachers. Both measures are present. This model goes beyond these measures in order to reflect the impact of factors other than the number of teachers available and the number of vacancies present.

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DEFINITIONS

The definitions used in this model are as follows:

Supply

Supply is defined as the number of teachers employed and providing services to students within a particular disability group at any given time. Added to supply are vacancies. While conceptually not part of supply, the addition of vacancies allows for the total number of special education positions available (or projected to be available) to be accounted for.

Supply is divided into current and projected supply. Both are further divided into certified and uncertified. A proxy measure of need can be developed by aggregating uncertified supply and vacancies.

"Certified" supply is the number of teachers who meet state certification and endorsement standards.

"Uncertified" refers to those teachers who carry temporary or emergency certification.

"Vacancies" are positions funded by the education agency

which are unfilled.

Current and projected is mediated by additions and attrition.

Additions is the number of certified teachers entering employment to fill a position for which they meet state certification and or endorsements. The components of additions are found in figure 2. They are defined as:

- The number of graduating students certified in the disability area (OSEP supported and not OSEP supported). In order to account for all additions, the model should account for the significant numbers of graduating students who complete their education in one market area (e.g. a state) and then take positions in other market areas. They may be counted here.

- Initial attrition is the number of graduating students projected to not enter the market area under consideration as teachers or who are already counted in current certified supply (e.g. someone certified with a bachelors degree who gets a masters degree);

- Returning teachers are those certified teachers projected to reenter the market area as teachers within

the disability area under consideration.

Attrition is the number of certified teachers and the number of uncertified teachers who leave their current teaching positions (figure 3). Teachers may leave the educational system, seek additional training, or assume other educational system positions. Attrition is typically expressed as a rate.

Demand

Demand is defined as the number of qualified special education teachers required to meet the educational needs of all students with the disability under consideration. Demand is determined by applying a teacher/student ratio to the number of students present or projected to be present (figure 4). Qualified refers to meeting state certification requirements.

- Prevalence is the number of students within the market area with a given disability. Depending on the purpose of the determination, child count data or other data sources may be used to establish the prevalence estimate used.

- Teacher/student ratio(s) are defined by the various states.

For purposes of modeling demand ratios may also be derived other sources or from weighted averages for regional or national needs.

Need

Need is the difference between the certified supply and the demand.

Using the model

Using the supply and demand model found in figures 1, 2, & 4, the formulas for determining supply, demand and need are:

Abbreviations

To make the formulas of reasonable length the following abbreviations are used;

PC = Projected Certified Employed Supply

CC = Current Certified Employed Supply

AR = Attrition Rate

IAR = Initial Attrition Rate

CU = Current Uncertified Employed Supply

PU = Projected Uncertified Employed Supply

NGCT = Number of Graduating/Certified Teachers

NRT = Number of Returning Teachers

Formulas for figure 1:

Projected Certified Employed Supply (PC)

PC = CC + additions - (CC x AR)

Projected Uncertified Employed Supply (PU)

PU = [PC - CC] - [CU - (CC x AR)]

Formula for figure 2:

Additions

Additions = (NGCT x IAR) + NRT

Formula for figure 4:

Demand

Demand = prevalence x (teacher/student ratio)

Need

Projected Need = demand - PC + [total CC x AR]

Current Need = demand - CC

PROJECTING SPECIAL EDUCATION TEACHER NEEDS

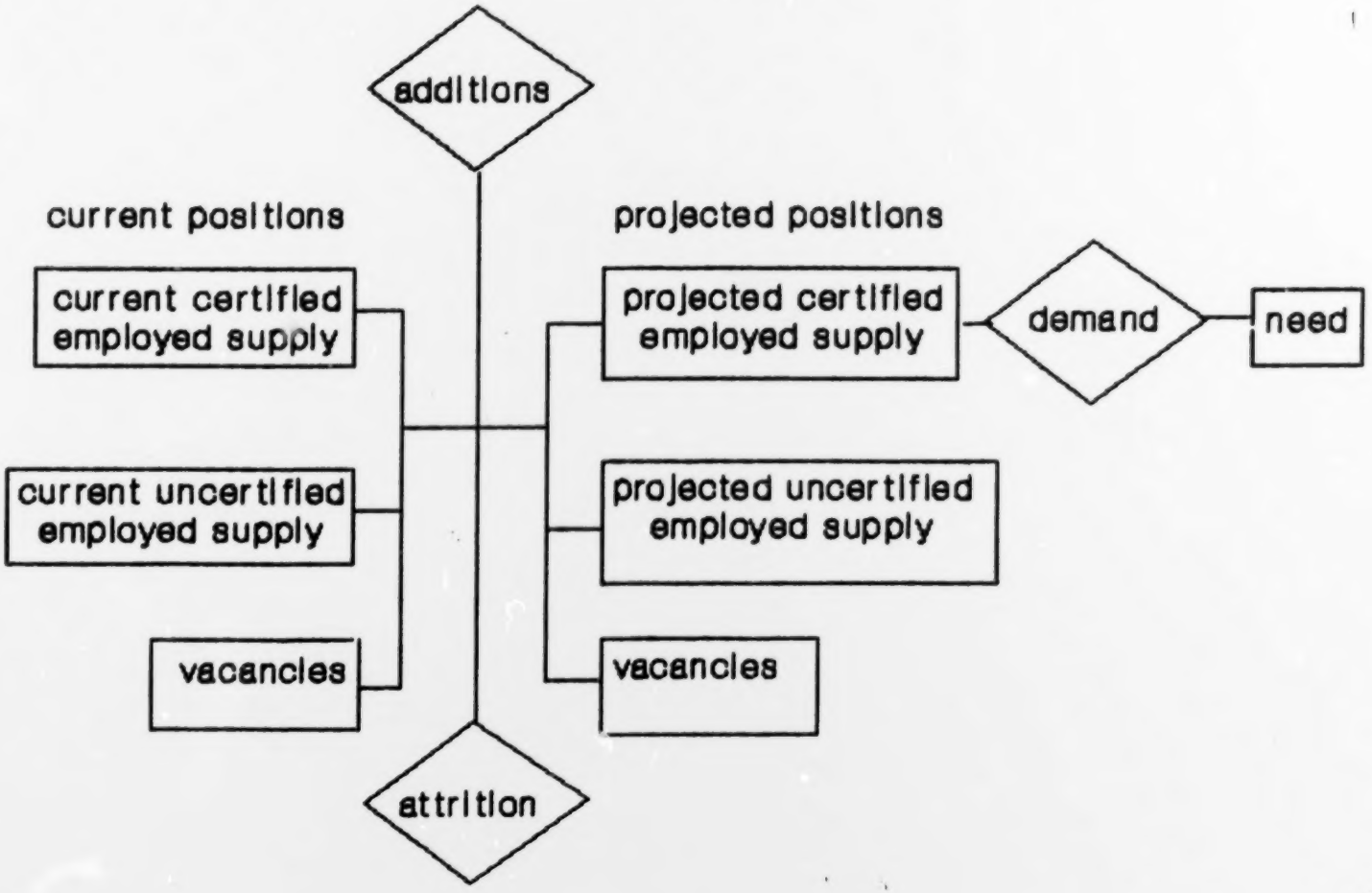

figure 1

ADDITIONS OF TEACHERS TO EMPLOYED SUPPLY

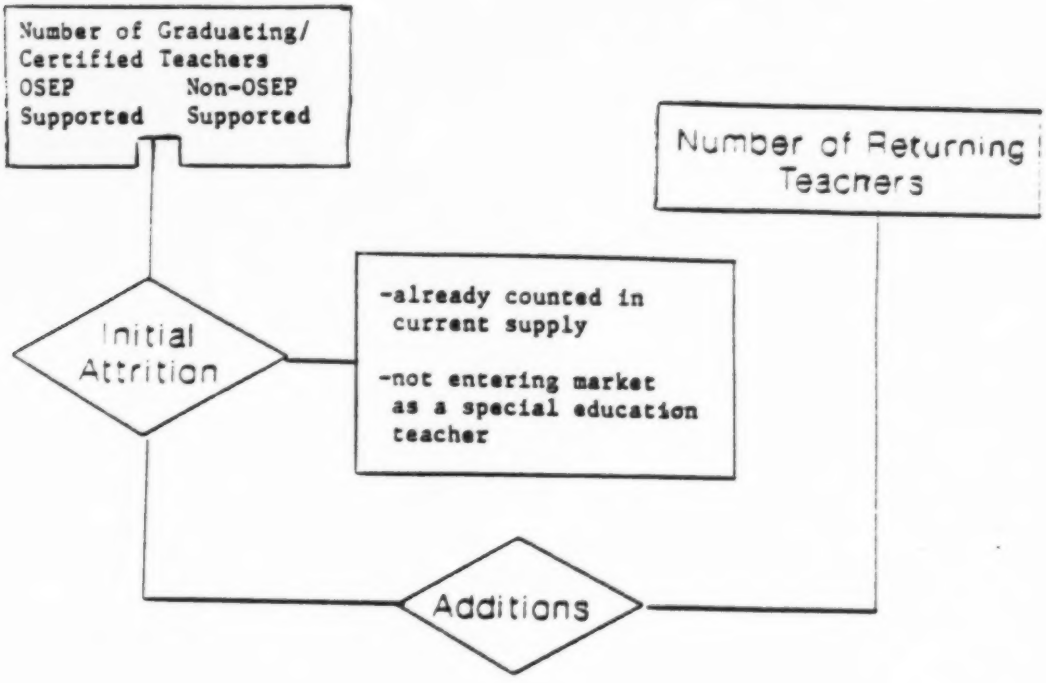

figure 2

ATTRITION OF TEACHERS IN EMPLOYED SUPPLY

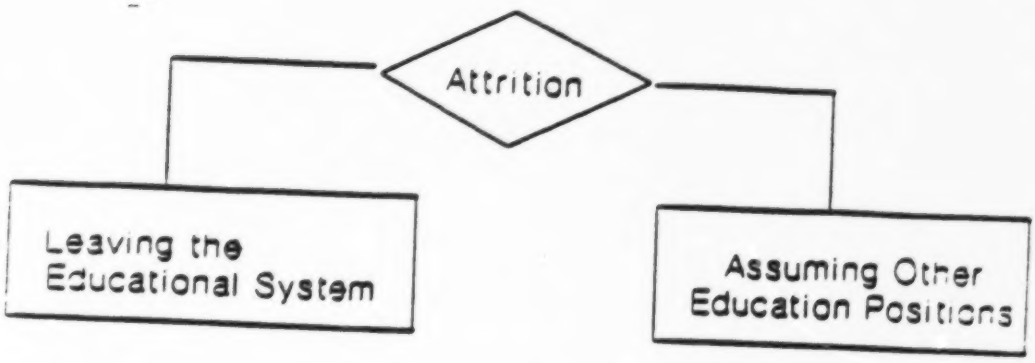

figure 3

PROJECTING DEMAND FOR TEACHERS
basic model

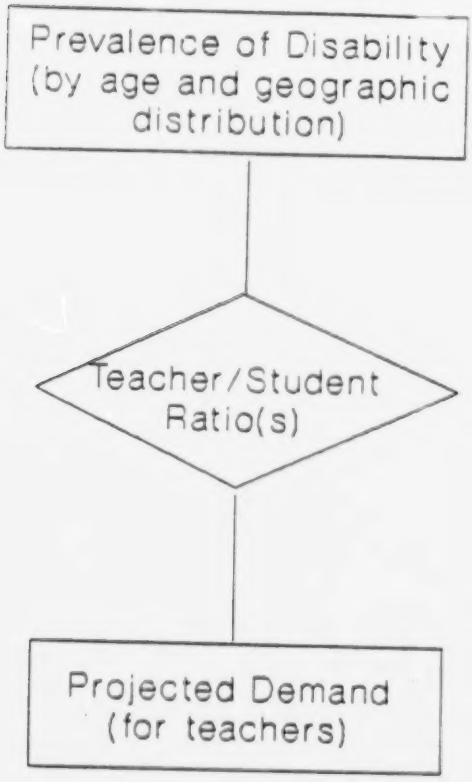

figure 4